

## Wavelength Drift Corrector for Wind Lidar Receivers, Phase II

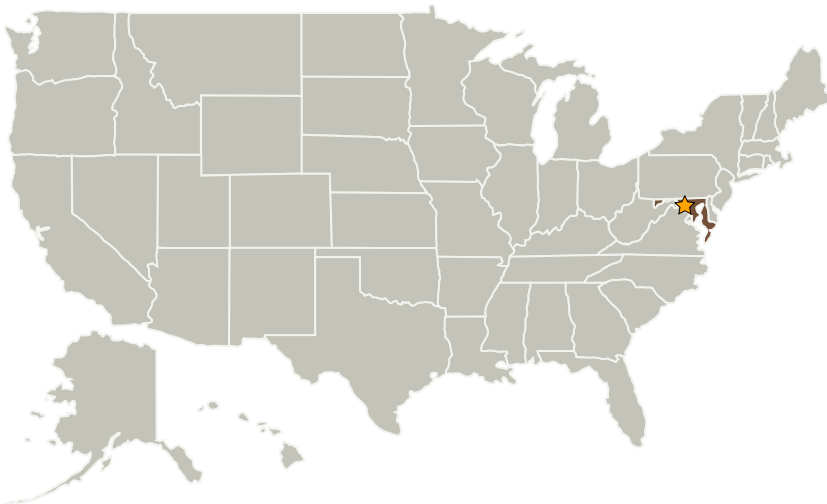
Completed Technology Project (2009 - 2011)



## Project Introduction

We propose to develop and demonstrate an receiver system utilizing our novel technique for tracking and compensating for laser wavelength shifts in lidar systems. During Phase 1, we demonstrated that in addition to tracking and correcting for laser frequency drift, the system is able to track and correct for etalon frequency drift (in fact, only this relative frequency drift can be tracked). Data was collected before, during and after a frequency drift over a period of time typical of lidar data integration times. It was seen that integrating without the correction resulted in data too blurred to have any value, but that the correction system compensated for the shift and allowed for proper wavelength measurements. We now look to incorporate this technique into a lidar receiver system and demonstrate its viability in measuring wind velocity. This receiver would prove the ability to reduce the cost and technical difficulties in building a wind lidar system both for NASA programs (NASA-GSFC CATS wind lidar) and commercial systems for use in weather forecasting and airport wind shear monitoring.

## Primary U.S. Work Locations and Key Partners

Wavelength Drift Corrector for  
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Organizational  
Responsibility**Responsible Mission  
Directorate:**Space Technology Mission  
Directorate (STMD)**Lead Center / Facility:**Goddard Space Flight Center  
(GSFC)**Responsible Program:**Small Business Innovation  
Research/Small Business Tech  
Transfer

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Organizations Performing Work	Role	Type	Location
★ Goddard Space Flight Center (GSFC)	Lead Organization	NASA Center	Greenbelt, Maryland
Sigma Space Corporation	Supporting Organization	Industry Small Disadvantaged Business (SDB)	Lanham, Maryland

## Primary U.S. Work Locations

Maryland

## Project Transitions

**August 2009:** Project Start**August 2011:** Closed out

## Project Management

**Program Director:**

Jason L Kessler

**Program Manager:**

Carlos Torrez

## Technology Areas

**Primary:**

- TX08 Sensors and Instruments
  - └ TX08.1 Remote Sensing Instruments/Sensors
  - └ TX08.1.5 Lasers